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OSA 1-20

TO

S E C R E T

081741Z

CITE

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PRIORITY

INFO

SUBJ: EVALUATION OF BLACK SHIELD MISSION BX6709

1. CAMERA TYPE I (115A), UNIT E WAS USED ON MISSION BX6709.

PROCESSING WAS ACCOMPLISHED AT [] THE MISSION CONTAINS 1330
TITLED FRAMES.

25X1

2. BOTH CAMERAS OPERATED SATISFACTORILY THROUGHOUT THE MISSION. DURING STRAIGHT AND LEVEL FLIGHT, GROUND RESOLUTION (ONE BAR PLUS ONE SPACE) OF 18 INCHES WAS OBTAINED ON IMAGERY NEAR THE VERTICAL. FOR ANALYTICAL PURPOSES, STRAIGHT AND LEVEL FLIGHT IS CONSIDERED AS ANY AREA WHERE THE CAMERA IS UNCAGED AND THE VEHICLE IS WITHIN THE CAMERA STABILIZATION LIMITS IN ROLL AND PITCH. THIS COMPRISES 42 PERCENT OF THE MISSION. IN AREAS OF COORDINATED TURNS AND VEHICLE MANEUVERING, THE IMAGE QUALITY REMAINS GOOD WITH MINIMAL SMEAR DUE TO VEHICLE MOTION. HOWEVER, IN A TURN, APPROXIMATELY 30 DEGREES OF SCAN OF ONE CAMERA IS GENERALLY UNUSABLE DUE TO IMAGING OF THE HORIZON. THE RESOLUTION (ONE BAR PLUS ONE SPACE) AT OBLIQUITY

S E C R E T

GROUP 1
EXCLUDED FROM AUTO-
MATIC DOWNGRADING
AND DECLASSIFICATION

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ANGLES 30 TO 50 DEGREES (8-18 NAUTICAL MILES LATERAL DISTANCE) IS ESTIMATED TO BE TWO TO THREE FEET. AT THE HIGHEST OBLIQUITY ANGLES OF 50 TO 67 DEGREES (18 TO 30 NAUTICAL MILES LATERAL DISTANCE). RESOLUTION IS ESTIMATED TO BE THREE TO FIVE FEET.

3. FRAMES 1-574 ARE EXPOSED AT 1/190 OF A SECOND; FRAMES 575-1192 ARE EXPOSED AT 1/210 OF A SECOND; AND FRAMES 1193-1330 ARE EXPOSED AT 1/170 OF A SECOND. ALL FRAMES RECEIVED MAXIMUM DEVELOPMENT AND THE DIFFERENCE IN EXPOSURE CANNOT BE DETECTED. ALL EXPOSURES APPEAR ACCEPTABLE FOR THE EXISTING CONDITIONS (SUN ANGLE, REFLECTIVITY, ETC.) UNDER WHICH THE MISSION WAS FLOWN. IN COMPARING GROUND AREAS EXPOSED IN THE FORWARD AND AFT CAMERAS AT THE SAME TIME, THE AFT FRAMES CONSISTENTLY HAVE HEAVIER DENSITY.

4. NO PHOTOGRAPHY IS ACQUIRED DURING THE ASCENDING AND DESCENDING PORTIONS OF THE MISSION. THE UNCORRECTED BAROMETRIC ALTITUDE RANGES BETWEEN 73900 AND 81200 FEET. NO DATA REDUCTION PROBLEMS HAVE BEEN ENCOUNTERED DURING VEHICLE MANEUVERING.

5. LONGITUDINAL MINUS DENSITY STREAKS ARE VISIBLE ON SOME FRAMES THROUGHOUT THE MISSION, BUT THEY ARE MINIMAL AND NO DEGRADATION IS APPARENT. PLUS DENSITY SPOTS AND ASSOCIATED STREAKS ARE PRESENT INTERMITTENTLY THROUGHOUT THE MISSION. IN EVERY INSTANCE, THE AREA AFFECTED DOES NOT EXCEED 0.25 SQUARE INCH AND APPEARS TO BE AN EXPOSURE OF A FOREIGN SUBSTANCE. FOR EXAMPLE, SEE FRAMES 1058 AND 1062.

6. MINOR OVERLAP OF CONSECUTIVE FORWARD/AFT FRAMES IS PRESENT APPROXIMATELY SIX TIMES DURING VEHICLE MANEUVERING. THE OVERLAP DOES NOT EXCEED 1.2 INCHES AND IN ONLY ONE CASE EXCEEDS 0.5 INCH. IMAGE DEGRADATION IS APPARENT ONLY IN THE OVERLAPPED, DOUBLE-

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EXPOSED AREAS. FOR EXAMPLE SEE FRAMES 279/284 AND 1131/1134. THE DATA BLOCK ENCROACHES INTO THE AFT FORMAT IN A SMALL NUMBER OF FRAMES. THE ENCROACHMENT DOES NOT EXCEED 0.5 INCH. FOR EXAMPLE SEE FRAMES 262, 862, AND 1000.

7. PROGRAMMED V/H AND SENSED V/H ARE USED ON THIS MISSION. THE IMAGE QUALITY UNDER BOTH CONDITIONS IS SATISFACTORY. THE INS TAPE AND FILM DATA BLOCK INDICATES THAT THE MISSION WAS FLOWN IN AN UNCAGED CONDITION UNTIL FRAME 1315. ONLY FIVE FORWARD FRAMES ARE CAGED BETWEEN 1315 AND THE END OF THE MISSION (FRAME 1330).

8. THE CORRELATION OF THE INS TAPE, FILM DATA BLOCK AND IMAGERY IS SATISFACTORY BY ELAPSED TIME. THE INS TAPE RECORDS ONE MINUTE HIGHER THAN THE FILM DATA BLOCK FOR BOTH LATITUDE AND LONGITUDE. INS TAPE DATA IS NOT AVAILABLE FOR FRAMES 565-573, 1185-1191, AND 1325-1329. THESE FRAMES ARE FROM CAMERA RUNDOWN AFTER TURNOFF AND ARE CONSIDERED BONUS FRAMES.

9. A TIME HISTORY OF EVENTS AFFECTING THE EXPLOITATION OF THE MATERIAL BASED ON ELAPSED TIME FROM A/C TOUCHDOWN ARE:

TIME

HR-MIN

02 01 RECEIPT OF INS TRANSMISSION AT [REDACTED]

25X1

06 31 RECEIPT OF D-VALUES AT [REDACTED]

25X1

24 36 MATERIAL ARRIVED AT [REDACTED]

35 26 RECEIPT OF UNTITLED REPRODUCTIONS AT [REDACTED]

25X1

40 46 FINAL FRAME EPHEMERIS COMPLETED AT [REDACTED]

25X1

51 36 INITIAL READOUT OF MATERIAL COMPLETED

55 36 IPIR SENT FROM [REDACTED]

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10. CLOUDS OBSCURE 45 PERCENT OF THE PHOTOGRAPHY. GROUND HAZE IS MINIMAL, AND IN CLOUD FREE AREAS GOOD QUALITY PHOTOGRAPHY IS AVAILABLE THROUGHOUT THE MISSION.

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